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The Australian National University
Institute of the Arts
Canberra School of Art

Graduate Diploma of Art by Studio Practice

in

Wood

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of the Graduate Diploma of Art by Studio Practice

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Any errors remaining are my own.

Typesetting and design: Perfect Pitch

Contents

Introduction

In pursuing postgraduate studies I aimed to hone my design skills and to express certain aesthetically pleasing juxtapositions of the traditional and the unusual, the soft and the hard, the flowing and the abrupt. As a result, particular shapes have emerged in my work.

The Institute's woodworkshop's design expertise has contributed to this process. I have had the opportunity to learn to be versatile in my techniques, using hand carving for complex curves, and more complex construction methods — such as laminating using formers — for the simple, 'flat' curves. I have learned the necessity for such versatility if I am to have the freedom to express in wood the form I have in mind.

These lessons and my continual investigation of form have given me the design vocabulary to articulate my aesthetic. I have discovered that important elements include:

- soft clean curves and well-defined form;
- balance without symmetry;
- tactile attractiveness;
- a sharp focal point;
- functionality and structural soundness;
- unconventionality within a classical tradition; and
- a sense of movement.

Objectives

- To design and make aesthetically pleasing furniture and other wooden objects.
- To improve my designing/making skills.
- To investigate and realise curved forms in furniture production.
- To realise my own interpretation of 'classical' lines.

Method

My designing begins with sketches on paper. For the drawer unit and cabinet I made 1:5 scale models, after experimenting with a number of sticks taped together to get an idea of line and shapes that appealed to me.

Construction of each piece is either by laminating and hand carving solid timber, or by experimenting with other techniques — chiefly, producing horizontally curved vertical faces using 2mm-thick timber veneers sandwiching 1.5mm bending ply. Both approaches have stretched my making and designing skills significantly, and have been invaluable learning experiences.

The contexts for my work

Historical context

The Art Nouveau designers' and makers' mastery of woodcraft was nothing less than virtuosic. My purpose has been to learn to emulate that mastery. Most of the furniture from that era, though, is overly ornate for my liking. I try to extract and develop key elements of the Art Nouveau work as the basis for innovative modern design in my own work.

I particularly appreciate the subtlety of the works of Eugène Vallin and Emile Gallé, from the School of Nancy, which Gallé established in 1901 in Lorraine, France. The Nancy furniture uses nature, particularly the flower and its components, as its central decorative theme (Duncan, 1982, p31).

I have found detail of the work of another Art Nouveau designer, Gaillard, inspiring too, in its flowing curved ornamentation, as exemplified in a buffet door he designed in 1900 (cf Madsen, 1956, p373).

The Art Nouveau tradition brought a freshly pragmatic perspective to woodwork, but perhaps the best perspective is the long view of Hseih Ho, an art critic of the fifth century. In the earliest known written expression of the fundamental canons of Chinese painting, Hseih Ho set down six skills, or 'Principles', necessary for mastery. The first is an inner discipline, the other five expressions of that discipline. Each principle constitutes a challenge. The Chinese found the first discipline, the inner one, their main challenge.

The First Principle consisted of something hard to translate. The closest I have seen to a definition comes from Blum (1977, p1), who says the First Principle is sometimes defined as 'breath-resonance life-motion'. Quoting a Chinese art historian, he said it is definite, yet indescribable:

> It is how you feel when you enter a room and sense that everything in it is somehow harmonious; you know that you are at peace there. It is how your life suddenly seems to change when you fall in love. It is the way in which your spirit comes into subtle accord with the movement of life around you; at the same time it is an experience within yourself — at the very centre. It is active and passive, embracing and releasing; it is a profound sense of being.
>
> (*Ibid.*)

The Chinese painters' foremost task lay in mastering the First Principle, for only through harmony with the 'vital cosmic spirit or breath' could the painter convey life's mysterious power (*Ibid*). But acquiring that Principle was useless without mastering the other five skills — vitality of brushstroke, accuracy in portrayal, versatility in colouring, care in arrangement of composition, and transmission of tradition through copying the works of earlier masters. Clearly, each of these 'skills' in itself implies such a grasp of the simultaneous use of many lesser techniques, that it enjoys elevation to a higher status — a 'Principle'.

These Principles are the real challenges of art, and their analogues are the challenges to my own work. I have attempted to meet them.

Personal context

- In 1989 I attended a lecture by George Ingham in which George asked his students to go outside and collect leaves, sprigs from bushes and trees, flowers, grass seeds etc, and to study and draw the shapes occurring in them — the shapes of nature. I decided to try George's idea, and thus discovered in nature lovely flowing profiles and compound curves that, whilst sometimes very complex, maintained purity of line and of form. These forms appear in my own work, sometimes in flat curves and sometimes in compound curves.
- Love of music influences the way I shape my pieces. In particular I have attempted to reflect in my work the music of Sibelius, with its drama, its uplifting arrangements, its great dynamic and expressive range, and its sudden changes of mood from smooth and flowing to powerful and abrupt. I aim to set similar surprises or turns of character in the shapes I produce, so that depending upon what angle you view them from, you can see in them either purely flowing lines or sharp profiles.
- Music has an underlying order, too, that helps inform my work. The cellist Pablo Casals, in his own work (i.e., performance), is said to have believed firmly in the relativity, or interdependence, of all things (Littlehales, 1929, p127), and to have been 'governed by freedom within order' and naturalness within order (Kirk, 1974, p46).

Never willing to sacrifice art to theory, he steeps himself in the purely musical meaning and value of a work and makes his technique fit what he has to express.

As I see it, this approach — incidentally subordinating tradition of technique to expression — is tantamount to ensuring surprise and spontaneity within an orderly framework, rather than enjoying the freedom merely to be constrained.

Accordingly, my own work contains references to the classical wild elements of nature — the unpredictable contours of landscape and of fire and water. This freedom of form nevertheless remains within a geometric framework. Refer, for instance, to the carving over the edge of a strictly elliptical tabletop; and to the carvings in the head and foot of a bed conforming to the usual overall shape and dimensions for such a boudoir piece.

- My great grandfather was the realist painter Henry Livens. His own work has served as an exemplar to me, not only of workmanship, but also of observation and emulation of natural forms.
- The gentle curves in water-worn seaside rock tend to be all concave, meeting at edges that themselves curl with pure lines to meet at gentle corners. Studying these lines has informed my work too, because I appreciate their purity.
- The most profound inspiration for my work, however, has been inherent in the wood itself: the variety and richness of its grain and texture, the character with which it responds to being shaped, and the warmth and life that can (and, in my view, should) remain in a finished piece.

The Bed

Purpose

I designed this queen-sized low bed for use with a futon mattress.

Figure 1-1

Concept

I wanted to design a bed incorporating specific functional elements — in particular, some shelving for tea cup, watch, light or what have you. At the same time, sharpness and a look of delicacy were important to me. I relate the carving in the bed to cliffs, ledges, ocean waves and water-worn rock.

Approach

I drew up a rough sketch and was encouraged to make a full-sized mock-up using high-density foam. The result showed me what I didn't want — it was ugly and cumbersome. But the beginnings were there. I began sketching the design again, drawing long curved lines, full-sized, until I was happy with the shapes and silhouette I had created.

My subsequent investigations into three-dimensional form and flowing planes that work together proved interesting. I was enthusiastic to make the piece.

Figure 1-2

Construction

I began with basic lines and kept working on the carving until I was satisfied with the form created. I chose to compromise on the potentially greater functionality that soft rounds offer, because they could not offer the character I sought. I constructed the bed from NSW Rose Mahogany.

Result

The carvings on the head and foot of the bed have the effect I wanted; I find them interesting (figures 1-1 and 1-2). They invite exploration while I am lying in bed, and to run your fingers over, they are a tactile pleasure.

Some criticisms of the design to date appear below, with my comments.

- *The bed is too low. It should be at traditional height to allow the viewer to appreciate the carving.*
- I feel much more secure sleeping close to the ground. And people do appreciate the carving at its present height.
- *Getting in and out of a bed at that height is too hard.*
- Maybe for some.
- *You can't store anything under the bed.*
- Losing storage underneath is a small compromise.
- *The sharpness on the bedhead could be dangerous for small children.*
- One obviously has to train children to respect furniture. Small children may not be suitable accessories. For some lifestyles the bed will not be suitable. But a large proportion of the public does not have, and will not have, small children.

The Sideboard

Purpose

I set out to design a sideboard.

Sideboard

Approach

Using sticks, I came up with a shape I liked at 1:5 scale, and proceeded to design within this form. Drawers went into one end, and a shelved cabinet into the other (figure 2-1). Turning to the back, I added external shelves to the concave centre.

After much deliberation I decided I really had two pieces of furniture here that should be separate. I sketched until I had two pieces I really liked.

Figure 2-1

The ambitiousness of these designs only fully unravelled itself over the many months I took to realise them. They became more difficult at every turn — nothing was straightforward, because nothing was straight!

I made up 1:5 scale models of the separate pieces that pleased me (figure 2-2), a spiral drawer unit and a teardrop cabinet.

Figure 2-2

Spiral drawer unit

Approach

I made the drawer unit first — an enormous challenge for my designing/making skills. I didn't know until the very end whether I could make it come together and work; there were many complexities and the engineering had to be very precise at every step. But I started with a technical working drawing.

I wasn't satisfied just to fit round drawers into a semi-circular cavity, as I wanted the spiral effect that would result from their being flush with the outside back of the carcase on the pivot side, folding into the carcase on the opening side. For these pieces in particular, clean, flowing, unbroken lines were important to me.

Construction

I began by making a female former for the five drawer sides, using a method George Ingham taught me (figure 2-3). This jig makes a perfect cylinder of strips of glued veneer once you squeeze the strips into the former and clamp the former across the cut side (figure 2-4). An internal former is unnecessary. I must admit I was skeptical about its working, right up until it did work.

Figure 2-3

The chief difficulties I encountered lay in calculating the exact length of each strip of veneer/ply to go into the former. Most frustrating was the variable thickness of the ply, from 1.5mm to 1.7mm. Dry runs were impossible because in such a tight curve the ply would snap unless it was already wet with the epoxy resin glue.

Each drawer is made of 2mm-thick brushbox veneer on the outside and inside, sandwiching two layers of bending ply (figure 2-5).

The jig was also handy for cleaning up the top and bottom of each drawer after glue-up. For this, I used a router.

The next step also required the jig and a router. Using a 4mm slotting cutter, I cut the slot in the front of the drawers that would house the drawer base. I stepped the bottom of the drawer back to allow for the drawer to run on an 18mm disc.

I designed the discs to fit exactly into the carcase and stop just short of the drawer front, which needed to be as simple as possible. I wanted the grain to line up all around the outside of the drawer unit.

The next step was to make wooden blocks to house the bronze cylinders for the pivot action of the drawers and to connect the front pivoting side of each drawer to the back. All the drawers are fixed onto one 10mm steel rod. The cleaned-up drawer sides needed to be cut in an exact place and stepped out, so that the drawer, rather than being strictly circular, actually has a gentle spiral shape. This is necessary in order for the front of the drawer to be flush with the back of the carcase when the drawer closes.

The block, I decided, needed to be very strong. For that reason, I made it from elm, for its characteristic interlocking grain.

Figure 2-4

Each profile had to be identical in all five connecting blocks and the hole bored exactly in line in each (figure 2-6). The shaping had to be finished by hand. It was a very intense and laborious procedure.

To save wear on the moving parts, the bronze sleeve and the steel pivot rod need to fit snugly. Precision parts being hard to obtain, I made them myself. Boring and turning the bronze bushes on the metal lathe to their required size and shape was my first experience on the metal lathe; and a very rewarding experience it was.

Figure 2-5

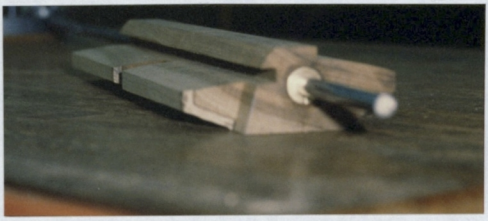

Figure 2-6

Before gluing up the drawers, I needed to have an exact circumference measurement — which meant I needed to make up the back carcase. There is no way of knowing just how much the half-cylinder forming the back carcase is going to spring when released from the former it is shaped in. I allowed 20mm; but in fact it didn't spring at all!

I was fortunate enough to have someone give me a good supply of second-hand chipboard from which I was able to make all the jigs for this project. The work and materials that go into making these jigs and formers are an extravagance. To justify it,

Figure 2-7

Figure 2-8

I like to find many uses for them. You will note as you read this report that I have managed to use them more than once.

The ribs of the former are made from a template and routed one-to-one using a following cutter to ensure they are all identical sizes (figure 2-7). A metal strap takes the place of a female former. You will notice the rounded profile on the timber end of the metal strap (figure 2-8). I did this to add extra tension at the bottom, where it is needed (figure 2-9) — another George Ingham tip. Its purpose is to allow the strap-end to roll slightly up the strap as the clamps tighten up on it, thus pulling the strap tighter.

Figure 2-9

The glue-up for the back carcase was a mammoth job. The problem was to make the metal strap bend, for its full length, all around the edge of the shaped timber — enough to let us clamp it and wind it up the rest of the way. I finally did it by clamping three-foot sash clamps to the timber and using the clamps to lever the sheet around, whereupon other helpers quickly clamped the strap-end home. This process took around two hours, with the number of helpers increasing as we went along. To get it all clamped home. we ended up with seven strong men and many minds. It was an ordeal.

We repeated the process for the teardrop cabinet, for which it was a lot easier, as the metal sheet was now bent in the right place.

After leaving the epoxy resin glue to cure for seven days, I removed the carcase from the former (figure 2-10).

At this stage I had a major disappointment. The outside veneers on the back of the carcase had separated from each other in the process of clamping down the strap. The glue with which I had butt-jointed them, AV180 glue, had given way. (The packaging tape supporting the joints had not helped particularly; it had stretched.) Consequently, the glue lines were obvious.

Correcting this meant inlaying strips of veneer over each join. On a curved form, this was difficult.

I prevented this same problem the second time around, on the teardrop cabinet, by using fibreglass-reinforced packaging tape on the outside veneers.

After cleaning and patching up the carcase I had to cut the top profile, using a jigsaw. I took some time to decide on the exact line it should be cut to — concave up or down, or straight. I ended up with a curve that began concave down at the bottom and finished concave up. The next major decision was how to lip it so the ply core was covered. I eventually decided I would inlay endgrain into it. This entailed making a jig for my router so I could rout out a channel 6mm deep and 6mm wide along the top of the profile, leaving the 2mm veneers intact on either side. To do this I left a safe millimetre of ply on either side of the track and hand-pared it out after routing, ending up with a channel roughly 8mm wide. I then had carefully to fit sections of 6mm-deep endgrain up the spiral. This was a big job but quite rewarding.

Figure 2-10

I used a disc sander and spokeshave to shape the inlays.

Discs for drawer runners were chipboard that I lipped with solid brushbox and veneered. Once I had the exact measurements for each drawer, I marked the exact location of each disc. Using the biscuit cutter in such a tightly curved profile needed some planning— even the marking beforehand was tricky! I did the biscuiting by fitting size 20 biscuits into the joins. The cutter needed to be dialled out all the way, and I had to make a special bendable fence, clamp it in position inside the carcase, and biscuit up to the fence. I made the fence from 18mm MDF, to which I applied lots of saw kerfs with the table saw, leaving only a 4mm depth of solid sheet.

The discs needed individual fine-tuning to

Figure 2-11

Figure 2-12

Figure 2-13

Figure 2-14

fit the carcase exactly, then gluing with biscuits and epoxy resin.

As all the discs were too large to insert without springing open the carcase, I did these glue-ups all in one go — a tricky job! I applied pressure to the joints with band clamps, and for additional clamping force, I used female clamping blocks over the top and bottom discs. I clamped a caul over the clamping blocks for that extra bit of force on all the discs.

To finish the drawers I manufactured ply bottoms using 2mm brushbox veneers sandwiching 1.5mm ply (figure 2-11). I needed to specially profile gluing blocks so I could clamp onto a straight surface in the glue-up rather than onto the curved surface of the elm alignment block (figures 2-11 and 2-12). I had to glue up everything together — the alignment block, the drawer bottom, and the side (figure 2-13).

Each drawer was a major job. Each took a day. As I cleaned it up, I had to custom-make lipping for the top (figure 2-14). To keep integrity in the lipping I decided to keep its grain direction correct. This meant making up a circular shape in sections, keeping the grain direction true in each. I then glued each section to the top of the drawer sides oversized; routed back using a one-to-one following cutter; and bevelled with the router and a steady hand.

The plinth I made with the inside offcuts of my first jig (figure 2-3). I hollowed the plinth out with a large forstner bit and dry-dowelled it to the bottom disc of the carcase.

Then I covered the plinth with 0.7mm stainless steel sheeting, attaching it to the back of the plinth with screws. I made a special stainless steel fitting to house the bottom of the steel rod that the drawers pivot on, and a brass housing at the top. Locating these two fittings — which had to be exact — was an anxious task. Somebody is looking after me — everything ended up working beautifully and fitting perfectly.

I investigated the use of both handles and recesses as drawer pulls, experimenting with many different design solutions before settling on my choice (figures 2-15 and 2-16).

Result

I have had very little negative criticism of this piece. One significant comment was that it would be far easier to operate than conventional drawers for a person with only one hand.

Figure 2-15

Figure 2-16

The Dining Chairs

Purpose

I wanted to design a dining table and chairs.

Concept

I had in mind chairs with backs carved out of solid, incorporating fretwork to lighten the look of them; with an asymmetry and a sharpness to please my soul. I wanted the whole piece comfortable, tactile, and inviting.

Approach

I designed the chairs in the same way I designed the bed, drawing sweeping curves and redrawing until I had a profile that excited me.

Once I was happy with the front elevation profile, I drew it up in side elevation, incorporating a lumbar support and the usual ergonomic considerations for the manufacture of a comfortable chair.

The compound curves in the back also provide a curved profile in plan view for the shape of the chair back (figure 3-1).

Construction

I made the seat from four 2mm sheets of ply, gluing them together into a curved shape in a male/female former.

For the sake of comfort, I kept the front of the carvings soft and round, taking all the sharp carving to the back of the chair.

Once again, to keep the delicate sharp edges, I did all the shaping by hand, using carving gouges, rifflers and rasps, and a curved cabinet scraper, and finally sanding them smooth. Then I oiled.

I chose an elliptical shape for the seat, to incorporate some order into the design and because I also had that in mind for the table.

The timbers are selected blackwood from Tasmania and NSW. The colours range from reds to greens to browns, and I have distributed the colours evenly amongst each of the four chair's components.

I cut the components for the backs four-up from laminated blocks of blackwood, incorporating the lumbar curve and wasting as little timber as possible (figure 3-2).

These two back sections I fitted together by careful use of the spokeshave and bobbin sander, gluing them in a butt joint. I drew the planned outline of the profile on the two pieces (figure 3-3, over page). The middle cut-out was easy to clean up, but the other three cut-outs I had to do after glue-up by drilling small holes at either end so I could remove the waste with an electric jigsaw. They were a little harder to clean up.

To prevent splitting, I had to leave small rounds at either end of the fretwork openings. I would rather have left them sharp.

The chairs took an enormous amount of hand shaping. I wouldn't recommend them as a production item, but I am glad I made them.

Choosing the upholstery material and colour of fabric caused me frustration and anguish. Three trips to Queanbeyan to an upholsterer, and fossicking through many fabric shops, failed to illuminate the right material.

Figure 3-1

I tried the textiles department of the Institute. Nobody there had the time to weave me a fabric specially; but by this stage I realised exactly what I wanted — a quality linen slub

Figure 3-2

weave in a claret colour. I ended up buying the fabric in a paler colour in order to dye it myself. Having tested three different dye combinations, I was pleased to finally come up with the colour I wanted — hooray! I used equipment in the textile department, and the help of staff and students there.

Result

The colour needed to have the right tonal value to blend into the background and not jump out at the viewer. The chairs are busy enough and the seats large enough to stand out already (figure 3-4). The claret is a rich colour. I originally wanted it a little darker, but I ran out of dye. I'm now glad I did — I think the colour unifies the whole setting, including table.

One or two have found the lop-sided back support disturbing (figure 3-5). But those who have tried getting used to it, succeed without difficulty. These are dining chairs, not easy chairs, and they are certainly comfortable and very functional for that.

Figure 3-3

Figure 3-4

Figure 3-5

The Dining Table

Figure 4-1

Purpose

I decided to keep the dining table very simple to avoid competition with the chairs whilst still harmonising with them.

Concept

I repeated design elements from the dining chairs, which I had already conceived and constructed, to integrate the dining table into the collection. These elements included one in the carved design in the chair backs, which I repeated in a section of the table top. The oval shape of the table top reflects the shape of the chair seats, and the cylindrical chair leg element is carried over to the table legs.

Approach and construction

I began by sketching designs. I then drew up a technical drawing and constructed the underframe from the drawing. I incorporated gentle curves in the under-rails of the table for aesthetic and structural reasons.

Result

The table top carving is deep, and renders that part of the table top virtually unusable (figure 4-1).

I believe the carving is such a strong visual element that the viewer finds it hard to look past. I like the way the carving continues around and under the table top (figure 4-2). Once again it is very tactile, and invites the touch.

Criticisms I have had of the table include:

The legs appear not to be square.

This is just an optical illusion. I could probably fix that by tapering them slightly, but that would alter the whole feel of the piece, and I don't want to do that.

Figure 4-2

Some people will feel awkward about having a deep carving on a table top.

I believe this to be a small compromise for the visual and tactile qualities that the carving contributes. Some people wonder about the shakes in the timber in the top of the table. They do look a bit like machine marks, but I can assure everyone that they are just a natural part of the timber.

Teardrop Cabinet

Purpose

The teardrop cabinet is the second half of my two-piece sideboard. It goes with the spiral drawer unit in numerous compatible orientations. I find the shape a very pleasing one, reminiscent of yin and yang (figure 5-1). It has uninterrupted clean flowing lines, slightly organic but ordered.

Concept

The cabinet and drawer unit are designed for use as a room divider between lounge and dining rooms. They are both sculptured pieces that change as they open. One discovers there is more to them than appears at first glance. I believe they are unconventional enough in their design to arouse most people's curiosity to investigate further.

Approach

Working out the design, as I mentioned earlier (see p 7), was a process of making 1:5 scale models and drawing sketches.

The technical drawing for this cabinet is superimposed on that for the drawers, as they both have exactly the same dimension in the semi-circular component of their carcases.

Construction

This allowed me to use the same former to shape both pieces (see pages 8–9, figures 2-7 — 2-9). For this cabinet I had to make an extra three male-and-female formers (figures 5-2 and 5-3).

Once again the ribs are made from recycled MDF. I placed a sheet of plastic-coated 4mm-thick MDF over the ribs and sandwiched 5 sheets of 1.5mm ply between two sheets of 2mm thick brushbox veneers. I made my own veneers by resawing sections of brushbox, bookmatching them, and edge-gluing them into a sheet using epoxy resin glue held with reinforced tape.

Figure 5-1

Figure 5-2

Once I had spread the glue and located all components into the former, I placed them in a veneer press applying several tonnes of force while the glue dried. This resulted in the appearance of a wavy texture in the surface of the carcase where the ribs had pressed. This feature is particularly visible in the doors of the cabinet — my own form of rippled brushbox (figure 5-4).

The only alternatives to this effect would be either to make the whole former solid instead of ribbed — requiring four times the amount of materials — or to use thicker packing sheets over the ribs.

I rejected the first option because of the cost involved, the waste of materials, and the sheer weight of the formers needed. The second option would need phenomenal physical strength. To bend a 4mm packing sheet around the former takes a lot of force; to double or treble that would have made impossible my locating the glued sheets inside the formers as they were fed into the veneer press. The top of the former had to be located and approximately in place beforehand.

I left each glued section in its former under the press for seven

days, allowing the epoxy resin to cure. Generally this helps to stop it springing out of shape when the form is released (see page 8); but this time the semi-circular component sprang by about 7mm.

This meant that to keep the shape true to the technical drawing (from which I work) I had to cut off a section, plane it to change its direction, and re-glue it. This was a difficult task. The surfaces had to be hand-planed true flat and square to all planes, and securely holding the work in a suitable position was not easy.

I had to repeat this fine-tuning with the hand plane on the mating surfaces of the two sections in figure 5-5. This took trial-and-error, patience and skill. It had to be just right, or the two sections would not have formed the smooth curve I required.

Gluing together these forms stretched my problem-solving abilities. I glued on glue blocks inside and out for clamping, only to find that the thread of the clamp wouldn't fit into the concave side. I then removed all but the top and bottom blocks. I ended up using band clamps to replace the clamps on the concave side. This worked well. I pre-sanded each form while it was more manageable and biscuited and glued the joint with epoxy resin (figure 5-6).

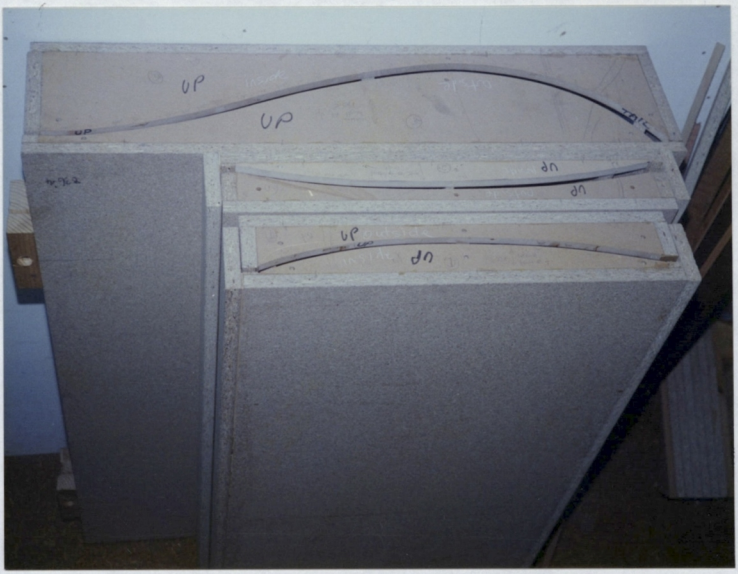

Figure 5-3

The shelves are 16mm MDF lipped with brushbox and veneered with 2mm-thick brushbox veneer. I then had to fit them to the carcase by fine-tuning with a spokeshave and bobbin sander.

Next I biscuit-joined the shelves (figure 5-7) and glued them into place with epoxy resin (figure 5-8).

The carcase-biscuiting presented a similar problem to that of the drawer unit (see bottom of page 9), but this time the depth stop depended on the convex or concave curvature, and so had to be different for each cut.

Applicaton of adequate pressure on the band clamps during glue-up pulled the tail of the carcase out of shape, so I had to take care to apply extra clamps to the tail end to compensate.

The next gluing exercise presented another problem: how to glue the front panels onto the carcase without a suitable surface to clamp onto. As figures 5-9 — 5-11 show, I clamped blocks of wood onto the shelves and clamped onto them. This technique worked well.

At this stage I had to give thought to shaping the external shelves and to clamping them into position for gluing.

I had biscuited the exterior of the carcase when it was in smaller sections. For the two outer sections of the shelves, I used dowels on the right-hand (tail) side of the cabinet. This was because the shelves are attached to slats too narrow to accommodate a biscuit joint (figures 5-12 — 5-14).

Making my own hardware is always enjoyable. I have become quite proficient with the use of the metal lathe (figure 5-16). I chose invisible hinging because I wanted the form of the cabinet to remain uninterrupted. Housing the 9mm diameter bronze component, which holds the stainless steel hinge pin, into a 13mm-thick door, caused me some worry (figure 5-15). To ensure that the hinge would work properly I had to drill exactly true and square, top and bottom.

Figure 5-4

Figure 5-5

Figure 5-6

There had to be little or no play in these hinges, or they would wear and the doors would wobble. The four holes took me three hours to drill because of the precise jigging involved. I couldn't tell for sure how well it would work until the final assembly — but once again, someone was looking after me; it works beautifully.

I also made stainless steel plates to strengthen the edges of the doors around the pin housings (figure 5-17).

The carcase's top and bottom have stainless steel fittings with a bronze sleeve inserted into them to house the stainless steel hinge pins. I had to custom-make all these fittings (figures 5-18 and 5-19). Lining them up top and bottom was tricky, as there is little or no play in them. Fortunately it worked!

As a door-closing device I chose ball-catches for their unobtrusiveness.

I was concerned about the weight of the carcase and its contents stressing the biscuits and the glue joint around the perimeter of the bottom shelf. I housed two 4mm x 25mm steel bars into the underside of the bottom shelf and edge of the cabinet to transfer the weight stress from the bottom shelf to the carcase (figure 5-19).

I cleaned up the curved surfaces largely with curved and straight cabinet scrapers (figure 5-20). I had to hang the doors during assembly of the cabinet, as they are held in place between the fixed cabinet top and the plinth. The plinth is dry dowell-jointed to the base of the cabinet. This allows the doors to be removed easily at a later date, making for easier moving of the cabinet and reducing the stress on the bottom shelf in the process.

I made 6mm dowels to locate the top for gluing on (figure 5-21). The separate slats at the tail end of the cabinet are housed into the top with stub mortice-and-tenon joints.

Gluing the top on had its own special problem. I could get sash clamps around most of the glue area, but not around the exterior shelf. George came to the rescue, and we put a caul across the area and forced sticks of timber between the girders in the roof and the caul. This did the job nicely (figure 5-22).

I made up the plinth in three sections out of particle board laminated to size. It is approximately 70mm thick and covered with 0.9mm stainless steel sheeting.

Ric Barnsley of the Institute's silversmith workshop welded the stainless steel for me. He did an excellent job. After scoring to break up the smoothness of the surface, I glued it to the plinth with epoxy resin. The offcuts of the plinth made effective gluing blocks.

Result

The cabinet has many distinct profiles (figures 5-1, 5-4, and 5-23 — 5-26). As with all of my furniture, it is finished with Scandinavian Teak Oil and sanded to 1200 grit. I like to use this oil because it soaks into the wood without coating it, and it brings out the natural beauty of the wood. The stainless steel is roughed with 80 grit to remove the shine that you see in the photographs.

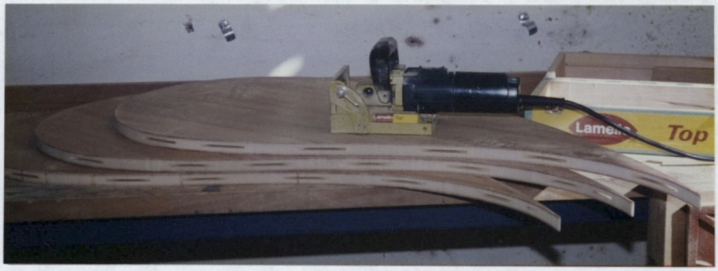

Figure 5-7

Figure 5-8

Figure 5-9

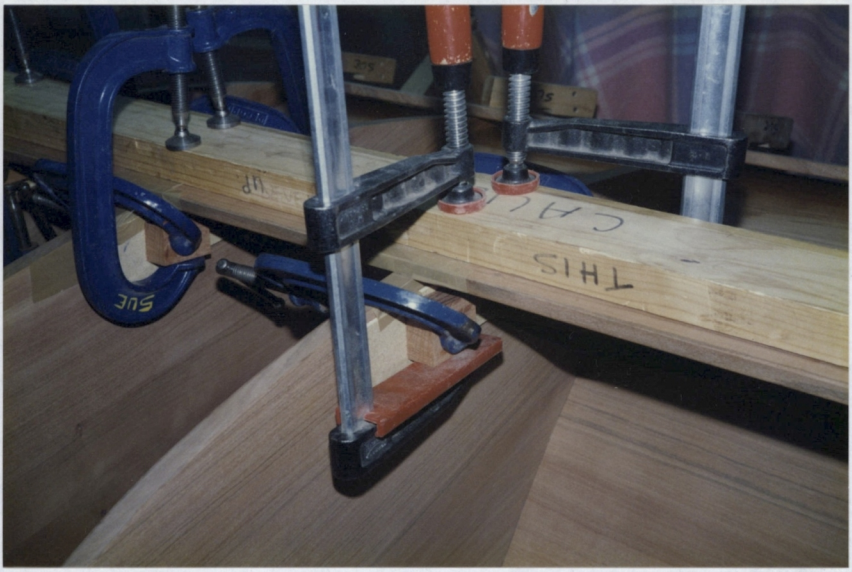

Figure 5-10

Figure 5-11

Figure 5-12

Figure 5-13

Figure 5-14

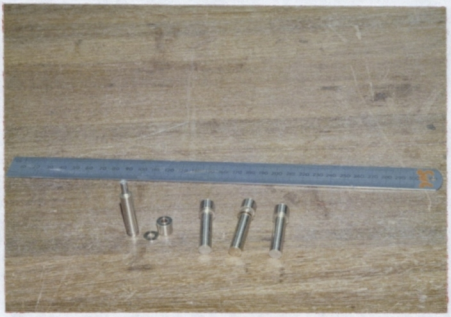

Figure 5-15

Figure 5-16

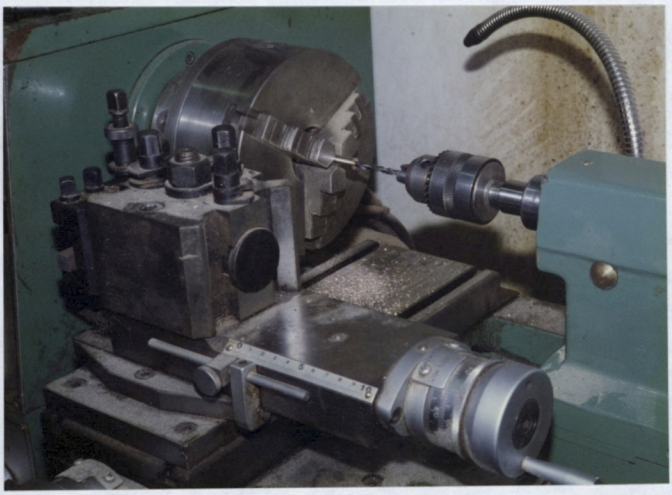

Figure 5-17

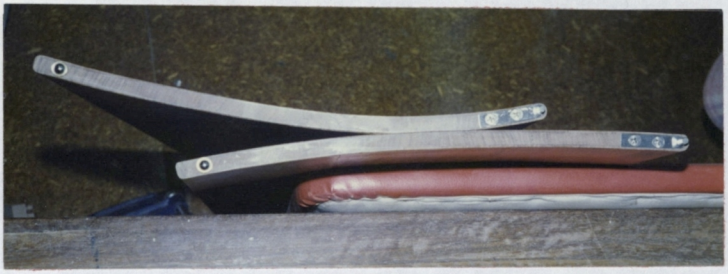

Figure 5-18

Figure 5-19

Figure 5-20

Figure 5-21

Figure 5-22

Figure 5-23

Figure 5-24

Figure 5-25

Figure 5-26

Bedside Tables

Purpose

I designed these bedside tables to go with the bed (see page 5).

Concept

I related the carving in the bed to cliffs, ledges, and nautical references. I see the bedside tables as small plateaus enhancing the formations in the bed.

The space created between the top and sides is reminiscent of the fretwork in the chairs and the bedhead and also in the tail of the cabinet. I don't like too large a mass of timber without some form of relief, and for that I like to create spaces.

The space created by suspending the top 10mm away from the supporting structure; the carved element; the elliptical shape; the use of stainless steel; and the curvature of the supporting structure, all tie in with my other pieces.

Approach

I have incorporated the oval shape from the dining table and chair seats. Rather than house the tops into the sides, I decided to suspend them 10mm inside the form. To do this I made stainless steel components and was pleased to be able to incorporate this metal into these pieces. I did this for structural reasons as well as aesthetic. Taking into account that solid timber shrinks and expands mainly in one direction with the humidity of the air, I would have had major problems in joining the two pieces because of incompatible grain directions.

Construction

I suspended an elliptical top into a coopered, carved form. The top is attached in three places with stainless steel connectors I fabricated from 32mm x 4mm stainless steel section.

Instead of using formers to mould veneers for the carcase, as in the drawer unit and cabinet, I decided to cooper the shape out of solid timber. This allowed me to carve into it as with the bed. The outside form has a vertical face that curves horizontally, repeating a design element of the cabinet and drawer unit.

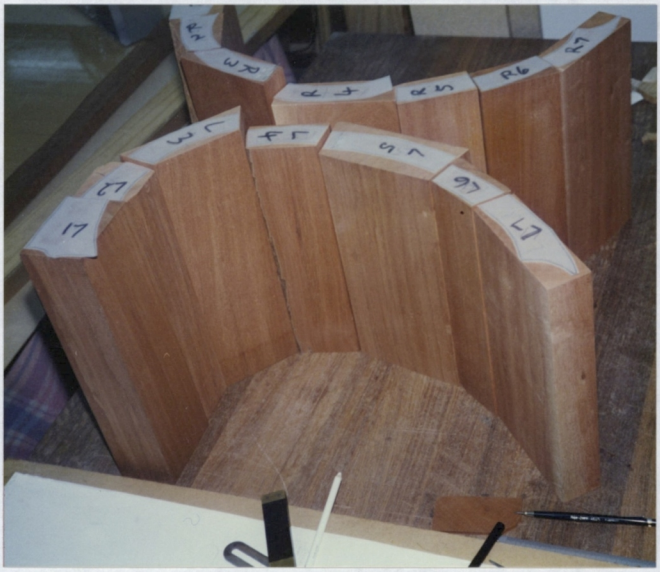

Figure 6-1

Figure 6-2

I transferred the shape from the drawing to the top of each stave to be coopered (figure 6-1). This provided a guide for the sculptured shapes and a precise reference for the hand-planed joints.

Next I glued gluing blocks to the outside face of each stave to facilitate cramping. Then I glued the seven staves into three larger sections for rough shaping (figure 6-2). I decided to carve and shape as much as I could before gluing these three sections together, because they were more accessible for shaping, and more easily held down, while still apart. Tools used in shaping included carving gouges, a cobbler's shave, rasps, cabinet scrapers (curved and straight) and a block plane (figure 6-3).

Figure 6-3

I also mortised each section for the stainless steel connectors that suspend the top, before gluing the three sections together (figure 6-4).

Figure 6-4

My previous experience using glues to laminate solid timber suggest that they would not be the most satisfactory to use in this context. I tried a new glue, Laminex AV270, to glue up this form. It is a white glue that is supposed not to have the creeping qualities of Laminex AV180 or the visible glue line of Epoxy Resin. I hope this proves to be a good move.

Result

Although I have successfully completed many complicated and difficult glue-joints before, I am pleased to have been able to do a true coopered piece. The sections had to be assembled for the final sculptural carving, making the piece difficult to handle and to hold down. I couldn't glue a fixing block onto it, because the glue joint would not have withstood the impact of the mallet on the gouge. I could have fixed the piece by screwing into the bottom endgrain, but I wanted to avoid the resultant screw-holes. Knowing how African carvers work, I decided to try holding the piece as best I could, by hand and with clamps. Whilst this achieved its end, if I were to do the piece again I would choose to screw it to a board.

Figure 6-5

At the time of writing this report, these bedside tables are not quite finished (figure 6-5).

Tongue Drums

Purpose

My interest in music led me some time ago to accept a commission for a series of tongue drums. Tongue drums up to now have all been rectangular. Knowing something about the effect of shape on the tone that musical instruments produce, I surmised that sound waves that don't hit corners are purer than those that do, and I was delighted to realise that the round drawer form (figures 4-3 and 4-4) gave me an opportunity to investigate the idea. I couldn't resist the temptation to use the cylindrical drawer form to make a round drum (figure 7-1 — which shows one of the drums on a makeshift stand).

Figure 7-1

Approach

I did extensive research into tongue drums and drums in general before commencing this project. Several members of the School of Art library staff were very helpful in obtaining material on inter-library loan from around the country. I am sure they located for me every piece of information on the subject that could be located.

I also talked to a number of makers of musical instruments and musicians.

The relevant information was available in bits and pieces. Interestingly, of all the written information available on tongue drums, none tells how to tune them. It seems that tongue drums, whilst they have different notes, are not tuned.

I adopted the approach that instrument maker Andy Rigby uses to tune marimbas.

Figure 7-2

Construction

I have spent a very interesting two months trying out different combinations of tongue patterns, wall thicknesses, and sound holes and lack thereof on top and bottom, sometimes thinning the underside of the neck of each tongue with a coving router bit (figure 7-2). I built six prototypes. Two combinations showed promise, and whilst they are not yet fully tuned, I am pleased with the quality of tone they give.

Result

I had in mind tuning the drums with ranges of an octave and one and a half octaves, but tuning has proven surprisingly difficult. In theory, you need to remove over half the underside thickness of the neck of a tongue to lower its pitch by an octave. Removing just a small amount, though, changed the pitch of one tongue by about an eleventh, or sixteen semitones.

Some tongues work really well — especially the central ones — but time doesn't permit me the luxury of solving the tuning problems.

The round shape of my tongue drums removes them from the tradition of tongue drums, and brings them into the tradition of conventional drums. The many visual elements in my tongue drums — such as the horizontally curved vertical sides, the fretwork openings in the top, the style of carving in the stand, and the juxtaposition of rounded and sharp shapes — echo those in the other pieces, and serve to integrate the work into my post-graduate collection.

The drums have an original form. I am presenting this on a stand for my assessment. I will design the drum stand to tie in with the rest of my post-graduate work. No doubt this will extend my designing skills once more.

Final Comment

I have thoroughly enjoyed my time back at art school, and I believe it has been an enormous benefit to my career as a designer-maker. Sincere thanks to everyone concerned — especially George Ingham for his patience, guidance, and wealth of knowledge.

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Study Program

for Graduate Diploma of Art by Studio Practice in Woodcraft

Sue Rowlands

SUE ROWLANDS

STUDY PROPOSAL

for Graduate Diploma of Art by Studio Practice in Wood

Sue Rowlands

STUDY PROPOSAL for 1991

1. SUBJECT - AIMS:

Graduate Diploma in Wood by Studio Practice.
My aim is to refine my style of work and to develop my aesthetic.

I intend to be designing and making furniture and other wooden objects in a contemporary idiom, using traditional furniture construction methods.

In the majority of my past works I have been investigating different ways of highlighting the stark contrasts of different timbers with their natural colours and tonal qualities. I also like the illusion of movement which I believe I create in my work, giving each piece a 'soul' of its own.

It is exciting to me to take a traditional, clean form, and to use this as my canvas on which to create pleasing art forms. It is some of the more subtle, pleasing elements that I have derived during this process that I would like to investigate further and expand upon next year.

For example, the understructure of my jarrah low table (see photos) is extremely sound and by further developing this theme, I can envisage, for instance, a dining table and chairs.

In my more current work (see slides) Nos. 10 and 11, and photos of cabinet) I have attempted to demonstrate the incredible beauty of the timbers of Accacia Carneii with its striking natural purple colour and finest texture and the purity of ivory wood which also has a very fine texture. This combination is very dramatic and exciting to me. Containing the natural wavy edge (worm holes and all) inside such a pure, clean form, and mitring the shape around a corner without losing the line of the shape, were also major elements that appealed to me at the time.

Whilst designing the inside of the cabinet, I did not want to add another element to the design for the drawer pulls. I was pleased with my resolution of this problem, whereby I relief carved the impression of a 'shadow' of the outside

design, into the drawer faces. This carving, to me, is the element in the cabinet which I believe is most successful. To refine this subtle shape and forget about adding a contrasting timber, I believe would have given me a more successful piece.

I would like to investigate this process further, applying low and high relief carving - deriving my shapes, forms and designs from nature, and applying this in a functional, decorative way. I should like to extend these lines into the furniture, etc. I make, as in door opening and structural components. I am also interested in working with petrified timber.

PERSONAL DETAILS:

For the past three years since graduating, I have been earning a living as a cabinet maker/artist/craftsperson. For one and a half years, I was employed by a joinery in Fyshwick and since then I have been self-employed, working in a shared workshop at the Old Canberra Brickworks in Yarralumla.

I believe I have a number of good ideas; however, by carrying them out on my own, I feel I am unable to fully develop my potential at this stage. The fact that I am 41 years old makes it all the more crucial to raise myself to a higher level now, and not put it off.
The environment created in the C.S.A. Wood workshop is an ideal one for me, where I am exposed to people with a vast background knowledge of furniture design and history.
I believe my work will always be 'different' and individual, and I am proud of that, however, it is beneficial for me to discuss directions in design with those people whose opinions I respect.

Returning to Art School for a year will help me refine my style and mature significantly as a designer/maker in wood.

2. METHODS AND MATERIALS:-

I intend to make my pieces using the machinery available in the C. S. A. Wood workshop and handskills as appropriate.

I have an extensive selection of my own tools and equipment.

I can supply all the timber and materials needed for the

completion of my work.

I will be extending my skills and knowledge already gained at Art School and beyond.

3. REFERENCE POINTS / LIMITATIONS:-

I believe the aims and objectives I have put forward for next year are well within my capabilities. Having earned a living from my craft for three years now, I believe I know that this proposal is not overly ambitious for me. I have no out-side commitments and working longs hours is a pleasure rather than a problem for me.
Designer/makers with whose work I admire and identify include Ashley Cartwright in the U.K., Barry Mills' early work (from Victoria) and George Ingham. These designers incorporate organic movement into their work and contrast it with a controlled geometry.

My intention is to investigate further this approach to contrast but with a greater emphasis on natural movement in timber.
I would like to include a sideboard, writing desk, dining table and chairs and a coffee table in my list of projects for the year. These are all utilitarian pieces. I like my work to be appreciated functionally as well as aesthetically.

4. TIMEFRAME:-

I would expect to have a minimum of eight major pieces for Exhibition. This averages 6 weeks per project which includes designing and making time.

5. VISUAL MATERIAL:-

SLIDES: No. 1 Display bowl in blackbean and Silver Ash - 1986
No. 2 Music Stand in casuarina 1987
No. 3 " " "" "
No. 4 & 5. Presentation box in ebony, etc. 1987
No. 6 Elm Cabinet 1987
No. 7 & 8 Candle holder 1987
No. 9 Carved Blackbean, gumleaves around mirror 1988
No. 10 & 11 Jewellery box in Ivorywood and Accacia Carneii 1989

PHOTOS:- Elm Cabinet, 1987, Jarrah low table 1988, Cabinet, "Wild Geese" in Ivorywood with Accacia Carneii inlay, 1990.

Sue Rowlands

SUE ROWLANDS

REVISED STUDY PROPOSAL

for Graduate Diploma of Art by Studio Practice in Wood

My work to date in this program has been developing my aesthetic and design application in the manufacture of furniture and other wooden objects.

I am portraying an assymetrical, curvilinear style in my designs. These works are all functional and structurally sound, yet they have been designed to have a deliberate compromise to the convention of furniture. This achieves a visual stimulation which invites the viewer to investigate further.

I am incorporating well defined forms with clean and simple lines, with an overall gentle and inviting appearance. This will be juxtaposed with a degree of sharpness at a focal point on the piece.

In the dining table I have taken a basic oval top with a fairly traditional understructure, and deliberately carved out a portion of the top surface making it unusable in that area. However, it remains functional as a dining table, but the carved area now creates a tension. The dining chairs are carved to have ergonomic credibility, yet they are assymetrical which makes them unconventional and maybe a little disturbing to some people. They are however, visually stimulating and comfortable.

The bed has inviting, flowing lines which I equate to cliffs, ledges and caves. On investigating further, the viewer will notice a sharpness incorporated in the form. This gives the piece an unconventional and exciting element, and it still fulfills its function as a bed.

I will be making bedside tables to compliment the bed. These are still in the design stage but will further develop concepts from the spiral drawer unit already completed.

This drawer unit incorporated experimental making techniques, laminating veneers and thin bending ply in formers. It is conventional in its purpose, yet unconventional in its opening mechanism and shape. It incorporates once again a sharp apex in an otherwise soft shape. It has its own presence and invites people to investigate further.

The teardrop cabinet which I am now working on compliments the spiral drawer unit and advances my designing-making skills once again. It is also an experimental piece. The form will be created by laminating sections up in formers. It is a very unconventional form for a cabinet and presents many technical and visual challenges.

The drum I worked on last year requires a lot more investigation necessary to develop it into a successful tuned instrument. It does, however, have an integrity of its own untuned, and I have decided to design a stand for it that will be along the lines of my other work and present it 'as is'. I will continue to work on its improvement after my time at Art School.

If time allows I have two more dining chairs to complete my dining setting which I will finish making.

No more work that has been undertaken in this program will be exhibited prior to my post-graduate exhibition.

FINISHED PIECES:

Bed
Spiral Drawer Unit
Dining Table
2 Dining Chairs

SCHEDULE:

26 April 1992	Finish Teardrop Cabinet
27 April 1992	Start Bedside Tables
31 May 1992	Finish Bedside Tables
1 June 1992	Start Drum Stand
21 June 1992	Finish Drum Stand

Sue Rowlands

26.3.1992